

भारतीय मानक  
मिलिंग कटर के लिए बेलनाकार शैंक  
भाग 2 समतल बेलनाकार शैंक के आयामी अधिलक्षण  
( दूसरा पुनरीक्षण )

*Indian Standard*  
CYLINDRICAL SHANKS FOR MILLING CUTTERS  
PART 2 DIMENSIONAL CHARACTERISTICS OF FLATTED CYLINDRICAL SHANKS  
( *Second Revision* )

ICS 25.100.20

© BIS 2013

BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## NATIONAL FOREWORD

This Indian Standard (Part 2) (Second Revision) which is identical with ISO 3338-2 : 2007 'Cylindrical shanks for milling cutters — Part 2 : Dimensional characteristics of flattened cylindrical shanks' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Cutting Tools Sectional Committee and approval of the Production and General Engineering Division Council.

This standard was originally published in 1978 based on ISO 3338-1 : 1977 'Parallel shanks for milling cutters — Part 1: Dimensional characteristics of plain parallel shanks' and ISO 3338-2 : 1977 'Parallel shanks for milling cutters — Part 2: Dimensional characteristics of flattened parallel shanks'. The first revision of this standard was published in 2004 with considerable assistance from ISO 3338-2 : 2000 'Cylindrical shanks for milling cutters — Part 2: Dimensional characteristics of flattened cylindrical shanks'. This second revision is being harmonized with ISO 3338-2 : 2007 by adoption in dual numbering system to make pace with the latest developments that have taken place at international level.

This standard is now published in three parts with general title 'Cylindrical shanks for milling cutters'. The other parts in this series are:

- Part 1 Dimensional characteristics of plain cylindrical shanks
- Part 3 Dimensional characteristics of threaded shanks

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 2768-1 : 1989 General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications	IS 2102 (Part 1) : 1993 General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerance indications ( <i>third revision</i> )	Identical
ISO 3338-1 : 1996 Cylindrical shanks for milling cutters — Part 1: Dimensional characteristics of plain cylindrical shanks	IS 8692 (Part 1) : 2004 Cylindrical shanks for milling cutters: Part 1 Dimensional characteristics of plain cylindrical shanks ( <i>first revision</i> )	do
ISO 3338-3 : 1996 Cylindrical shanks for milling cutters — Part 3: Dimensional characteristics of threaded shanks	IS 8692 (Part 3) : 2007 Cylindrical shanks for milling cutters: Part 3 Dimensional characteristics of threaded shanks	do

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

# CYLINDRICAL SHANKS FOR MILLING CUTTERS

## PART 2 DIMENSIONAL CHARACTERISTICS OF FLATTED CYLINDRICAL SHANKS

### ( Second Revision )

## 1 Scope

This part of ISO 3338 specifies the dimensions of flattened cylindrical shanks for milling cutters — of diameters 6 mm to 20 mm for single-flattened shanks, 25 mm to 63 mm for double-flattened shanks and 6 mm to 32 mm for shanks with an inclined clamping surface. In the case of single-flattened shanks, it is applicable to both single-ended cutters and double-ended cutters, as double-flattened shanks cannot admit single-ended cutters.

The dimensions of plain cylindrical shanks and threaded shanks are given in ISO 3338-1 and ISO 3338-3, respectively.

The two shank types covered by ISO 3338-1 and this part of ISO 3338 have the same dimensional characteristics (diameters and lengths) but different tolerances on diameters, namely:

- h8 for plain cylindrical shanks, commonly used for tools mounted in collets;
- h6 for flattened cylindrical shanks, intended to be mounted in chucks and secured with a clamping screw, and requiring an accuracy adjustment.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

## 3 Dimensions

### 3.1 General

All dimensions and tolerances are given in millimetres. Tolerances not specified shall be of tolerance class m, in accordance with ISO 2768-1:1989.

### 3.2 WE form — Flatted cylindrical shanks with single flat for diameter $d_1$ of 6 mm to 20 mm

The dimensions of flatted cylindrical shanks with a single flat are shown in Figure 1 and given in Table 1.

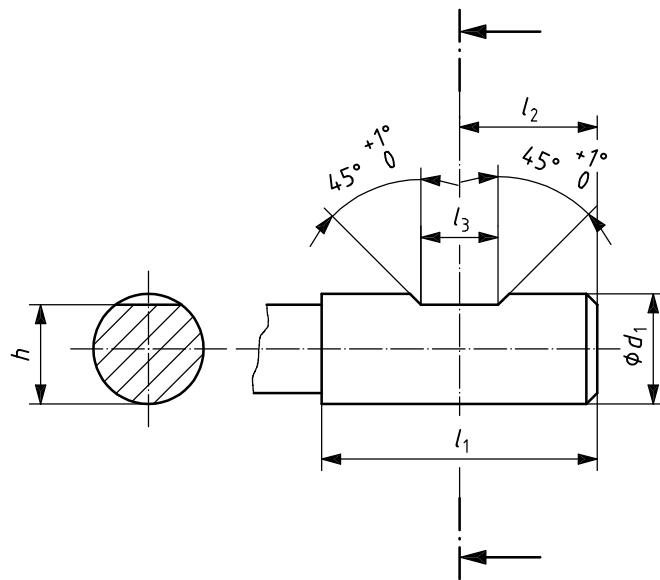


Figure 1 — WE form — Flatted cylindrical shanks with single flat

### 3.3 WE form — Flatted cylindrical shanks with double flat for diameter $d_1$ of 25 mm to 63 mm

The dimensions of flatted cylindrical shanks with a double flat are shown in Figure 2 and given in Table 1.

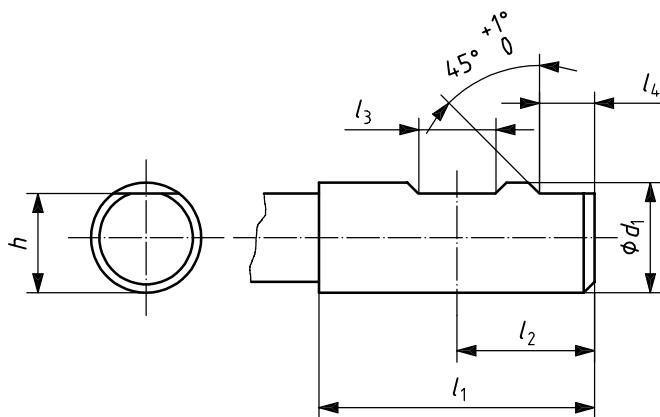


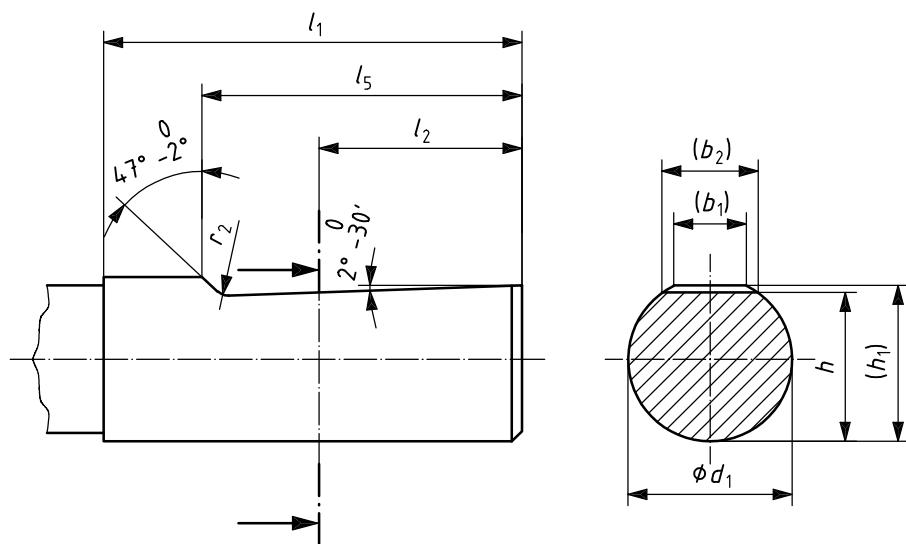
Figure 2 — WE form — Flatted cylindrical shanks with double flat

**Table 1 — WE form — Flatted cylindrical shanks with single or double flat**

Dimensions in millimetres					
$d_1$ $h_6$	$l_1$ $+2$ $0$	$l_2$ $0$ $-1$	$l_3$ $+0,05$ $0$	$l_4$ $+1$ $0$	$h$ $h_{11}$
6	36	18	4,2	—	4,8
8			5,5		6,6
10	40	20	7	—	8,4
12	45	22,5	8		10,4
14			10	17	12,7
16	48	24			14,2
18		12	19	16,2	
20	50	25		11	18,2
25	56	32	14	23	23
32	60	36			30
40	70	40	18	23	38
50	80	45			47,8
63	90	50	—	—	60,8

### 3.4 WN form — Flatted cylindrical shanks with inclined clamping surface

The dimensions of flatted cylindrical shanks with an inclined clamping surface are shown in Figure 3 and given in Table 2.



**Figure 3 — WN form — Flatted cylindrical shanks with inclined clamping surface**

**Table 2 — WN form — Flatted cylindrical shanks with inclined clamping surface**

Dimensions in millimetres

$d_1$ $h_6$	$l_1$ $+2$ $0$	$l_2$	$l_5$ $0$ $-1$	$h$ $h_{11}$	$h_1$	$b_1$	$b_2$	$r_2$
6	36	18	25	4,8	5,4	3,5	4,8	1,2
8				6,6	7,2	4,7	6,1	
10	40	20	28	8,4	9,1	5,7	7,3	1,2
12	45	22,5	33	10,4	11,2	6	8,2	
14				12,7	—	—	8,1	1,6
16	48	24	36	14,2	15	7,6	10,1	1,6
18				16,2	—	—	10,8	
20	50	25	38	18,2	19,1	8,4	11,5	1,6
25	56	32	44	23	24,1	9,3	13,6	
32	60	36	48	30	31,2	9,9	15,5	1,6



## **Bureau of Indian Standards**

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

## Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

## **Review of Indian Standards**

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: PGD 32 (1174).

## **Amendments Issued Since Publication**

Amendment No.	Date of Issue	Text Affected

## BUREAU OF INDIAN STANDARDS

### **Headquarters:**

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

*Telephones:* 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.org.in](http://www.bis.org.in)

#### **Regional Offices:**

## *Telephones*

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg  
NEW DELHI 110002

{ 2323 7617  
2323 3841

Eastern : 1/14, C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi  
KOLKATA 700054

$$\left\{ \begin{array}{l} 2337\ 8499,\ 2337\ 8561 \\ 2337\ 8626,\ 2337\ 9120 \end{array} \right.$$

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022

{ 260 3843  
| 260 9285

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600012

{ 2254 1216, 2254 1442  
{ 2254 2510, 2254 2315

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)

{ 2234 2319, 2234 2319  
{ 2832 9295, 2832 7858

**Branches:** AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PARIWANGA. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VIZAGAPATNAM.